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14  
EXAMINER

LEUNG, JENNIFER A

ART UNIT

PAPER NUMBER

1764

DATE MAILED: 09/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/415,673

Applicant(s)

SCHON, HARTMUT

Examiner

Jennifer A. Leung

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 24 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1,2,8,9 and 16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,8,9 and 16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 27 November 2002 is: a) ☒ approved b) ☐ disapproved by the Examiner  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## **DETAILED ACTION**

### ***Response to Amendment***

1. Applicant's amendment submitted on June 24, 2003 has been received and carefully considered. Claims 3-7 and 10-15 have been cancelled. Claims 1, 2, 8, 9 and 16 remain active.

### ***Claim Objections***

2. Claims 1, 2, 9 and 16 are objected to because of the following informalities:

Regarding claims 1, 2 and 9, -- of the cross section -- should be inserted after "one-half" (both recitations) to provide clarity in claim language.

Regarding claim 16, "the various tube packets" (line 4) should be changed to -- the plurality of tube packets -- for consistency in claim terminology, set forth in claim 9, line 5.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1, 2 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laquement et al. (U.S. 4,811,696) in view of Jackson (U.S. 2,391,244).

Regarding claim 1, Laquement et al. (FIG. 2) disclose a fluidized bed reactor with a heat exchange apparatus, said heat exchange apparatus comprising a heat exchanger 60, including a plurality of tube packets 66 (column 4, lines 44-51), in a fluidized bed 100 for releasing heat to a heat-transfer medium in the tube packets 66; and a ring pipe (manifolds 62, 64) coupled to the heat exchanger, wherein the tube packets 66 are fed with the heat transfer medium distributed via

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the ring pipe **62** and the heat transfer medium removed via the ring pipe **64**, wherein the ring pipe is mounted as a distribution or collection chamber on a wall of the reactor **10** (column 4, lines 20-43). In view of the newly added limitations, the chambers **62**, **64** comprise an essentially circular cross-section and are placed inside the reactor wall **74**. However, Lacquement et al. are silent as to whether the chamber **62**, **64** may be placed both inside and outside the reactor wall **74**, such that essentially one-half of the cross section is assigned to the interior and the other half is assigned to the exterior. In any event, it would have been an obvious design choice for one of ordinary skill in the art at the time the invention was made to select such a chamber configuration in the apparatus of Lacquement et al., on the basis of suitability for the intended use, because substitution of known equivalent structures involves only ordinary skill in the art. *In re Fout* 213 USPQ 532 (CCPA 1982); *In re Susi* 169 USPQ 423 (CCPA 1971); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); *In re Ruff* 118 USPQ 343 (CCPA 1958), and furthermore, such a chamber design is conventionally known in the art, as evidenced by Jackson. To illustrate, Fig. 1 of Jackson shows a heat exchange apparatus comprising a plurality of tube packets (copper tubes **14**) and a ring pipe (spherical header **10**) coupled to the heat exchanger, wherein the pipe **10** is mounted as a distribution or collection chamber on the wall of the apparatus and comprises an essentially circular in cross-section, wherein the pipe **10** is placed on the apparatus wall both inside and outside with essentially one-half assigned to the interior and one-half assigned to the exterior (column 2, line 54 to column 3, line 21; column 5, lines 6-39).

Regarding claims 2 and 8, the same comments with respect to Laquement et al. and Jackson apply. Additionally, Laquement et al. disclose the coupling between the ring pipe **62**, **64**

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and the heat exchanger 60 comprises an internal opening (i.e. openings at interfaces connecting tubes 66 to manifolds 64, 66, FIG. 2). The disclosed openings structurally meet the claims and would inherently define a desired pressure loss and ensure uniform flow over the tube packets, as evidenced by the restricted flow area of the openings.

4. Claims 9 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laquement et al. (U.S. 4,811,696) in view of Jackson (U.S. 2,391,244) and Vancamp et al. (U.S. 3,679,373).

Regarding claim 9, Laquement et al. (FIG. 2) disclose a method of exchanging heat in a reaction by the generation of steam in an apparatus, wherein the apparatus comprises a heat exchanger 60, including a plurality of tube packets 66 (column 4, lines 44-51), in a fluidized bed 100, for releasing heat evolved from an exothermic reaction to water in the tube packets 66; and a ring pipe (manifolds 62, 64) coupled to the heat exchanger, wherein the tube packets 66 are pressurized with water distributed via the ring pipe 62 and the generated steam is removed via the ring pipe 64, wherein the ring pipe is mounted as a distribution or collection chamber on a wall of the reactor 10 (column 4, lines 20-43). In view of the newly added limitations, the chambers 62, 64 comprise an essentially circular cross-section and are placed inside the reactor wall 74. However, Lacquement et al. are silent as to whether the chamber 62, 64 may be placed both inside and outside the reactor wall, such that essentially one-half of the cross section is assigned to the interior and the other half is assigned to the exterior. In any event, it would have been an obvious design choice for one of ordinary skill in the art at the time the invention was made to select such a chamber configuration in the apparatus of Lacquement et al., on the basis of suitability for the intended use, because substitution of known equivalent structures involves

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only ordinary skill in the art. *In re Fout* 213 USPQ 532 (CCPA 1982); *In re Susi* 169 USPQ 423 (CCPA 1971); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); *In re Ruff* 118 USPQ 343 (CCPA 1958), and furthermore, such a chamber design is conventionally known in the art, as evidenced by Jackson. The same comments with respect to Jackson apply (see claim 1 above).

The collective teachings of Laquement et al. and Jackson are silent as to whether the apparatus may be used for oxychlorination. In any event it would have been obvious for one of ordinary skill in the art at the time the invention was made to use the modified apparatus of Laquement et al. for such reaction, since it is well known in the art that oxychlorination of ethylene may be conducted in fluidized bed reactors, wherein the heat of reaction is transferred to a heat exchange means located within the reactor. To evidence conventionality, Vancamp et al. teaches a process for the oxychlorination of ethylene, wherein the process is conducted within a fluidized bed reactor similar in structure and function to the modified apparatus of Laquement et al., wherein the reactor comprises a heat exchanger comprising a plurality of serpentine conduits 8 (substantially equivalent to the heat exchanger comprising tube packets disclosed above) that pass a heat transfer medium for cooling the reaction (FIG. 1, 2; column 3, lines 5-16; column 1, lines 14-21; 25-42). Additionally, apparatus limitations, unless they affect the process in a manipulative sense, may have little weight in process claims. *In re Tarczy-Hornoch* 158 USPQ 141, 150 (CCPA 1968); *In re Edwards* 128 USPQ 387 (CCPA 1961); *Stalego v. Heymes* 120 USPQ 473, 478 (CCPA 1959); *Ex parte Hart* 117 USPQ 193 (PO BdPat App 1957); *In re Freeman* 44 USPQ 116 (CCPA 1940); *In re Sweeney* 72 USPQ 501 (CCPA 1947).

With respect to claim 16, Laquement et al. disclose the coupling between the ring pipe 62, 64 and the heat exchanger 60 comprises an internal opening (i.e. openings at interfaces

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connecting tubes 66 to manifolds 64, 66; FIG. 2). The disclosed openings structurally meet the claims and would inherently define a desired pressure loss and ensure uniform flow over the tube packets, as evidenced by the restricted flow area of the openings.

***Response to Arguments***

5. Applicant's arguments filed on June 24, 2003 with respect to claims 1, 2, 8, 9 and 16 have been fully considered but they are not persuasive. In particular, applicant asserts,

“With regard to the prior art rejections it is respectfully submitted none of the prior art references teach the combination of elements recited in applicant's claimed invention.

Applicant's claim 1 recites a heat exchanger, including a plurality of tube packets, in a fluidized bed for releasing heat evolved from an exothermic reaction of the oxychlorination to a heat-transfer medium in the tube packets, to water/steam; and

the distribution or collection chamber is designed to be essentially circular in cross section and placed on the reactor wall both inside and outside with essentially one-half assigned to the interior and one-half assigned to the exterior.

Similar features are found in applicant's claims 2 and 9. Claims 8 and 16 depend from claims 1 and 9 respectfully and further include distinguishing features.

In view of the remarks set forth above, this application is in condition for allowance...” (pages 5-6 of response).

However, please note that applicant's arguments are incomplete and thus non persuasive for the following reasons:

- (i) Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references; and
- (ii) Applicant's arguments do not comply with 37 CFR 1.111(c) because they do not clearly

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point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. Further, they do not show how the amendments avoid such references or objections.

***Conclusion***


6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

\* \* \*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A. Leung whose telephone number is 703-305-4951. The examiner can normally be reached on 8:30 am - 5:30 pm M-F, every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn A. Caldarola can be reached on 703-308-6824. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Jennifer A. Leung  
August 25, 2003 

  
**HIEN TRAN  
PRIMARY EXAMINER**